

**HIERARCHICAL FAILURE MANAGEMENT
FOR PROCESS CONTROL SYSTEMS**

ABSTRACT OF THE DISCLOSURE

5 A hierarchical failure management technique uses an integrated equipment hierarchy to automatically pass failure information from control modules to unit modules. Each control module collects failure information and generates a composite failure code by mathematically combining the failure information collected by that module. Modules which are currently needed by a phase of the
10 unit module to carry out a process automatically send respective failure codes to the unit module. The unit module selects the worst failure code from a list of failure codes within the unit module and compares the selected worst failure code to a predetermined threshold value to determine whether the process should continue.